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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,529	11/20/2003	Cheng-Liang (Andrew) Hou	58268.00325	6853

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EXAMINER	
CHU, WUTCHUNG	
ART UNIT	PAPER NUMBER
2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/716,529	HOU, CHENG-LIANG (ANDREW)	
	Examiner	Art Unit	
	Wutchung Chu	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Herbst et al. (US6735679).

Regarding claim 1, Herbst et al. discloses a system for optimizing access to memory comprising:

- receiving a packet **(see column 6 line 57-62 where the term ingress submodule takes in packet corresponds to receiving a packet)**;
- determining an address of a free entry in a queue (**see column 7 line 19-26 where the term cell pointers and Common Packet Identifier (CPID) corresponds to an address of a free entry in a queue)**;
- placing the determined address in an entry of a prior-determined address in the queue to form a linking list **(see column 14 line 51-54where a linked list of memory pointers is formed which defines packet when the packet is transmitted via the appropriate egress port**

corresponds to a prior-determined address in the queue to form a linking list); and

- placing packet data of the packet in a free entry of a first data structure **(see column 14 line 55-56 where the term packet is fully written into CBP common buffer manager corresponds to placing packet data of the packet in a free entry of a first data structure)**,
- wherein there is one-to-one mapping between the queue and the first data structure **(see column 12 line 15-17 where cells of a particular packet are always handled together corresponds to one-to-one mapping between the queue and the first data structure)**.

Regarding claim 2, Herbst et al. teaches the packet is unicast **(see column 13 line 27)**.

Regarding claim 3, Herbst et al. teaches the packet is multicast or broadcast **(see column 14 line 17)**, and further comprising:

- determining an address of a free entry in each queue associated with a destination in the packet **(see column 14 line 12-13 where the Common Buffer Manager (CBM) writes this cell to the CBM memory allocation at the address pointed to by the first pointer corresponds to determining an address of a free entry in each queue associated with a destination in the packet)**; and

- for each queue associated with a destination in the packet, placing the respective determined address in a respective entry of a prior-determined address in each respective queue **(see column 55 line 55-59 where the term respective reassembly module can "string together" a plurality of linked cells into a single packet corresponds to placing the respective determined address in a respective entry of a prior-determined address in each respective queue)**.

Regarding claim 4, Herbst et al. teaches further comprising:

- determining a priority level for the received packet **(see column 17 line 8-11)**; and

- wherein the placing the determined address places the determined address in an entry of a prior-determined address in the queue having the same priority **(see column 26 line 50-54 where the term switch on chip (SOC) can assign an appropriate Cos class of service value for the packet, which can be considered to be equivalent to a weighted priority, based wither upon the destination address or the cource address of the packet, as matched in one of the table lookups corresponds to the placing the determined address places the determined address in an entry of a prior-determined address in the queue having the same priority)**.

Regarding claim 5, Herbst et al. teaches the determining a priority level includes examining a quality of service field within the received packet **(see column 17 line 8-11)**.

Regarding claim 6, Herbst et al. teaches further comprising updating free entry data to indicate that the determined address is in use **(see column 45 line 46-54 where the term every time a cell is written of the current cell in to CBP, another cell is fetched and becomes available to be written into the next cell header for that ingress stream corresponds to updating free entry data)**.

Regarding claim 7, Herbst et al. teaches further comprising placing a packet length of the packet in a free entry of a second data structure **(see column 31 line 49-53 where the term the packet information will include the size of the packet corresponds to comprising placing a packet length of the packet in a free entry of a second data structure)**; and

wherein there is one-to-one mapping between the first data structure and the second data structure **(see column 12 line 15-17 where cells of a particular packet are always handled together corresponds to one-to-one mapping between the queue and the first data structure, and column 15 line 3-5 where the term as more data packets are received and designated to be sent to the same egress manager corresponds to second data structure)**.

Regarding claim 8, Herbst et al. disclose all the limitations as discussed in the rejection of method claim 1 and is therefore system 8 is rejected using the same rationales.

Note: the phrase "capable of", and "adapted to" recited in claim 9 line 2, 5,7,9, and 13, do not positively support claim limitations, therefore the limitation after these phrases will not be considered. However, the cited reference teaches the limitations (see rejection).

Regarding claim 9, Herbst et al. teaches a transmit queue system, comprising:

- a first data structure capable of holding a plurality of packet data **(see column 30 line 33-35 where the term CBM common buffer manager is configured to maximize availability of address pointers associated with incoming packets from a free address pool corresponds to first data structure capable of holding a plurality of packet data)**;

- a queue capable of holding a linking list of addresses, the addresses having a one-to-one mapping with addresses in the first data structure **(see column 14 line 52-55 where the term CBM common buffer manager which determines a linked list of memory pointers is formed)**;

- a packet receiving engine capable of receiving a packet **(see column 6 line 57-62 where the term ingress submodule takes in packet corresponds to receiving a packet)**;

- a free entry engine coupled to the packet receiving engine and capable of determining an address of a free entry in the queue **(see column 7 line 20-27 where the term CBM common buffer manager handles queue management, and is responsible for assigning cell pointers to incoming cells, as well as assigning common packet ID corresponds to the free entry engine)**;

- a transmit queue engine, coupled to the queue, the packet receiving engine and the free entry engine, capable of placing the determined address in an entry of a prior-determined address in the queue to form a linking list **(see column 14 line 13-15 where the term CBM common buffer manager memory allocation at the address pointed to by the first pointer)**; and

- a packet buffer engine, coupled to the first data structure, the packet receiving engine and the free entry engine, capable of placing packet data of the packet in a free entry of the first data structure **(see column 14 line 55-57 where the term packet is fully written into CBP common buffer manager corresponds to placing packet data of the packet in a free entry of a first data structure)**.

Regarding claim 10, Herbst et al. teaches method, comprising:

- receiving an address in a queue **(see column 11 line 35-37 where the term EPIC module an ingress sub-module as an ingress function, determines the destination of the packet corresponds to receiving an address in a queue)**;

- reading packet data from an entry from a first data structure with the same address as the received address, the queue and the first data structure having one-to-one mapping **(see column 12 line 15-18 where CPS channel is configured to handle cells, cells of a particular packet are always handled together corresponds to reading packet data from an entry from a first data structure with the same address as the received address, the queue and the first data structure having one-to-one mapping)**;

- transmitting the packet data to a network node associated with the queue **(see column 11 line 24-28 where packet is intended to be transmitted to a user on one of ports of EPIC corresponds to transmitting the packet data to a network node associated with the queue)**;

- reading a next address in the queue from the received address in the queue **(see column 45 line 46-54 where the CBP mandates that the next cell header resident within PMMU, and every time a cell is written of the current cell in to CBP, another cell is fetched and**

becomes available to be written into the next cell header for that ingress stream corresponds to updating free entry data); and

- using the next address to repeat the reading packet data and the transmitting **(see column 47 line 30-33 where CBP Common Buffer Pool for cell requests from the read buffer for transfer of cells, and schedules requests for the reading of cell to go out to an egress corresponds to the next address to repeat the reading packet data and the transmitting)**.

Regarding claims 11-15, Herbst et al. disclose all the limitations as discussed in the rejection of method claim 2-7, and 10 and are therefore method claims 11-15, are rejected using the same rationales.

Regarding claim 16, Herbst et al. teaches a transmit queue system, comprising:

- means for receiving an address in a queue **(see column 11 line 35-37 where the term EPIC module an ingress sub-module as an ingress function, determines the destination of the packet corresponds to receiving an address in a queue)**;

- means for reading packet data from an entry from a first data structure with the same address as the received address, the queue and the first data structure having one-to-one mapping **(see column 12 line 15-18 where CPS channel is configured to handle cells, cells of a particular**

packet are always handled together corresponds to reading packet data from an entry from a first data structure with the same address as the received address, the queue and the first data structure having one-to-one mapping);

- means for transmitting the packet data to a network node associated with the queue **(see column 11 line 24-28 where packet is intended to be transmitted to a user on one of ports of EPIC corresponds to transmitting the packet data to a network node associated with the queue)**;

- means for reading a next address in the queue from the received address in the queue **(see column 45 line 46-54 where the CBP mandates that the next cell header resident within PMMU, and every time a cell is written of the current cell in to CBP, another cell is fetched and becomes available to be written into the next cell header for that ingress stream corresponds to updating free entry data)**; and

- means for using the next address to rerun the means for reading packet data and the means for transmitting **(see column 47 line 30-33 where CBP Common Buffer Pool for cell requests from the read buffer for transfer of cells, and schedules requests for the reading of cell to go out to an egress corresponds to the next address to repeat the reading packet data and the transmitting)**.

Note: the phrase "capable of", and "adapted to" recited in claim 17 line 6 do not positively support claim limitations, therefore the limitation after these phrases will not be considered. However, the cited reference teaches the limitations (see rejection).

Regarding claim 17, Herbst et al. teaches transmit queue system, comprising:

- a first data structure holding a plurality of packet data **(see column 14 line 55-56 where the term CBP common buffer manager corresponds first data structure holding a plurality of packet data)**;
- a queue holding a linking list of addresses, the addresses having a one-to-one mapping with addresses in the first data structure **(see column 14 line 51-54 where a linked list of memory pointers is formed which defines packet when the packet is transmitted via the appropriate egress port corresponds to a queue holding a linking list of addresses, the addresses having a one-to-one mapping with addresses in the first data structure)**; and
- a packet transmit engine **(see column 6 line 33-35 where EPIC and GPIC forwarding packet properly process a significant number of different types of packets)**, coupled to the first data structure and the queue, capable of
    - receiving an address in the queue **(see column 11 line 35-37 where the term EPIC module an ingress sub-module as an**

ingress function, determines the destination of the packet corresponds to receiving an address in a queue),

- reading packet data from an entry from the first data structure with the same address as the received address, transmitting the packet data to a network node associated with the queue **(see column 12 line 15-18 where CPS channel is configured to handle cells, cells of a particular packet are always handled together corresponds to reading packet data from an entry from a first data structure with the same address as the received address, the queue and the first data structure having one-to-one mapping)**,

- reading a next address in the queue from the received address in the queue **(see column 45 line 44-54 where the CBP mandates that the next cell header resident within PMMU, and every time a cell is written of the current cell in to CBP, another cell is fetched and becomes available to be written into the next cell header for that ingress stream corresponds to updating free entry data)**, and

- using the next address to repeat the reading packet data and the transmitting **(see column 47 line 20-33 where CBP Common Buffer Pool for cell requests from the read buffer for transfer**

of cells, and schedules requests for the reading of cell to go out to an egress corresponds to the next address to repeat the reading packet data and the transmitting).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yang (US2004/0095885) discloses priority queuing method and apparatus.

Lee et al. (US6996117) discloses vertical instruction and data processing in a network processor architecture.

Kadambi et al. (US7145869) discloses a method for avoiding out-of-ordering of frames in a network switch.

Herbst (US7065050) discloses a apparatus and method for controlling data flow in a network switch.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wutchung Chu whose telephone number is 571 270 1411. The examiner can normally be reached on Monday - Friday 1000 - 1500EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on 571 272 7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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